AMENDMENTS TO THE CLAIMS

Please cancel Claims 1 to 52.

Please add new claims 53 to 75.

Claims 1 to 52 (Cancelled)

53. (New) An isolated nucleic acid molecule consisting of a polynucleotide sequence selected from the group consisting of:

(a) an isolated polynucleotide encoding a polypeptide corresponding to amino acids 1 to 435 of SEQ ID NO:2 including the start codon;

(b) an isolated polynucleotide encoding a polypeptide corresponding to amino acids 2 to 435 of SEQ ID NO:2 minus the start codon;

(c) an isolated polynucleotide encoding a mature polypeptide corresponding to amino acids 39 to 435 of SEQ ID NO:2;

(d) an isolated polynucleotide encoding the LSI-01 polypeptide as encoded by the cDNA clone contained in ATCC Deposit No: PTA-2766;

(e) an isolated polynucleotide which represents the complimentary sequence (antisense) of (a), (b), (c), and (d).

54. (New) The isolated nucleic acid molecule of claim 53, wherein said polynucleotide is (a).

55. (New) The isolated nucleic acid molecule of claim 54, wherein said polynucleotide consists of nucleotides 68 to 1372 of SEQ ID NO:1.

56. (New) The isolated nucleic acid molecule of claim 5, wherein said polynucleotide is (b).

57. (New) The isolated nucleic acid molecule of claim 56, wherein said polynucleotide consists of nucleotides 71 to 1372 of SEQ ID NO:1.

58. (New) The isolated nucleic acid molecule of claim 53, wherein said polynucleotide is (c).

59. (New) The isolated nucleic acid molecule of claim 58, wherein said polynucleotide consists of nucleotides 182 to 1372 of SEQ ID NO:1.

60. (New) The isolated nucleic acid molecule of claim 53, wherein said polynucleotide is (d).

61. (New) A recombinant vector comprising the isolated nucleic acid molecule of claim 53.

62. (New) A recombinant host cell comprising the vector sequences of claim 61.

63. (New) A method of making an isolated polypeptide comprising:

(a) culturing the recombinant host cell of claim 62 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

64. (New) The isolated polynucleotide of claim 53 wherein said nucleic acid sequence further comprises a heterologous nucleic acid sequence.

65. (New) The isolated polynucleotide of claim 64 wherein said heterologous nucleic acid sequence encodes a heterologous polypeptide.

66. (New) The isolated polynucleotide of claim 65 wherein said heterologous polypeptide is the Fc domain of immunoglobulin.

67. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide has serine protease activity with Arg/Lys specificity.

68. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 185 to 209, 217 to 227, and 368 to 377 of SEQ ID NO:2, and wherein said polypeptide has serpin activity.

69. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 185 to 209, 217 to 227, and 368 to 377 of SEQ ID NO:2, and wherein said polypeptide does not have serpin activity.

70. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 63 to 80, 125 to 140, and 306 to 315 of SEQ ID NO:2, and wherein said polypeptide has serpin activity.

71. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 63 to 80, 125 to 140, and 306 to 315 of SEQ ID NO:2, and wherein said polypeptide does not have serpin activity.

72. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 384 to 404 of SEQ ID NO:2, and wherein said polypeptide has serpin activity.

73. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 384 to 404 of SEQ ID NO:2, and wherein said polypeptide does not have serpin activity.

74. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 405 to 415 of SEQ ID NO:2, and wherein said polypeptide has serpin activity.

75. (New) The isolated nucleic acid molecule of Claim 53(a), (b), (c), or (d), wherein said encoded polypeptide comprises one or more amino acid substitutions in the region embodied by amino acid positions 405 to 415 of SEQ ID NO:2, and wherein said polypeptide does not have serpin activity.